VOL. 480 JOURNAL OF CHROMATOGRAPHY OCTOBER 20, 1989

CONTENTS

FIRST INTERNATIONAL SYMPOSIUM ON HIGH-PERFORMANCE CAPILLARY ELECTROPHORESIS, BOSTON, MA, APRIL 10–12, 1989

Foreword
by B. L. Karger 1

History of electrophoretic methods
by O. Vesterberg (Solna, Sweden) 3

Harnessing electrical forces for separation.Capillary zone electrophoresis, isoelectric focusing, field-flow fractionation, split-flow thin-cell continuous-separation and other techniques
by J. C. Giddings (Salt Lake City, UT, U.S.A.) 21

Dispersion effects in capillary zone electrophoresis
by G. O. Roberts (Vienna, VA, U.S.A.) and P. H. Rhodes and R. S. Snyder (Huntsville, AL, U.S.A.) 35

General mathematical model for the steady state in isotachophoresis. Calculation of the effective mobility of terminating H^+ ions and two-buffer electrolyte systems
by J. L. Beckers and F. M. Everaerts (Eindhoven, The Netherlands) 69

Extra-column effects in high-performance capillary electrophoresis
by K. Otsuka (Osaka, Japan) and S. Terabe (Kyoto, Japan) 91

Analysis of factors causing peak broadening in capillary zone electrophoresis
by X. Huang, W. F. Coleman and R. N. Zare (Stanford, CA, U.S.A.) 95

Use of Peltier thermoelectric devices to control column temperature in high-performance capillary electrophoresis
by R. J. Nelson, A. Paulus, A. S. Cohen, A. Guttman and B. L. Karger (Boston, MA, U.S.A.) 111

Performance of an automated injection and replenishment system for capillary electrophoresis
by H. E. Schwartz, M. Melera and R. G. Brownlee (Sunnyvale, CA, U.S.A.) 129

High-sensitivity fluorescence detector for fluorescein isothiocyanate derivatives of amino acids separated by capillary zone electrophoresis
by S. Wu and N. J. Dovichi (Edmonton, Canada) 141

Characterization of a post-column reaction–laser-induced fluorescence detector for capillary zone electrophoresis
by B. Nickerson and J. W. Jorgenson (Chapel Hill, NC, U.S.A.) 157

Indirect fluorimetric detection and quantification in capillary zone electrophoresis of inorganic anions and nucleotides
by L. Gross and E. S. Yeung (Ames, IA, U.S.A.) 169

Photodiode array detection in high-performance capillary electrophoresis
by S. Kobayashi, T. Ueda and M. Kikumoto (Kyoto, Japan) 179

Instrumental developments in micellar electrokinetic capillary chromatography
by M. J. Sepaniak, D. F. Swaile and A. C. Powell (Knoxville, TN, U.S.A.) 185

Coupling of capillary zone electrophoresis and capillary liquid chromatography with coaxial continuous-flow atom bombardment tandem sector mass spectrometry
by M. A. Moseley (Research Triangle Park and Chapel Hill, NC, U.S.A.), L. J. Deterding and K. B. Tomer (Research Triangle Park, NC, U.S.A.) and J. W. Jorgenson (Chapel Hill, NC, U.S.A.) 197

Capillary zone electrophoresis and isotachophoresis–mass spectrometry of polypeptides and proteins based upon an electrospray ionization interface
by R. D. Smith, J. A. Loo, C. J. Barinaga, C. G. Edmonds and H. R. Udseth (Richland, WA, U.S.A.) 211

Preliminary investigation of ion mobility spectrometry after capillary electrophoretic introduction
by R. W. Hallen, C. B. Shumate, W. F. Siems, T. Tsuda and H. H. Hill, Jr. (Pullman, WA, U.S.A.) 233

Coupling capillary zone electrophoresis and continuous-flow fast atom bombardment mass spectrometry for the analysis of peptide mixtures
by R. M. Caprioli, W. T. Moore, M. Martin and B. B. DaGue (Houston, TX, U.S.A.) and K.Wilson and S. Moring (Foster City, CA, U.S.A.) 247

Semiconductor radioisotope detector for capillary electrophoresis
by S. L. Pentoney, Jr. and R. N. Zare (Stanford, CA, U.S.A.) and J. F. Quint (Fullerton, CA, U.S.A.) 259

Simple method for generation of a dynamic pH gradient in capillary zone electrophoresis
by V. Šustáček, F. Foret and P. Boček (Brno, Czechoslovakia) 271

Gel permeation chromatography combined with capillary electrophoresis for microanalysis of proteins
by H. Yamamoto, T. Manabe and T. Okuyama (Tokyo, Japan) 277

Effect of electrolyte and sample concentration on the relationship between sensitivity and resolution in capillary zone electrophoresis using conductivity detection
by X. Huang, M. J. Gordon and R. N. Zare (Stanford, CA, U.S.A.) 285

Simple device for flushing capillaries in capillary zone electrophoresis
by V. Rohlicek and Z. Deyl (Prague, Czechoslovakia) 289

Open-channel isoelectric focusing in thermally engendered pH gradients
by C. H. Lochmüller, S. J. Breiner and C. S. Ronsick (Durham, NC, U.S.A.) 293

Capillary electrophoresis of proteins in buffers containing high concentrations of zwitterionic salts
by M. M. Bushey and J. W. Jorgenson (Chapel Hill, NC, U.S.A.) 301

Factors affecting free zone electrophoresis and isoelectric focusing in capillary electrophoresis
by M. Zhu, D. L. Hansen, S. Burd and F. Gannon (Richmond, CA, U.S.A.) 311

Capillary zone electrophoresis of oligonucleotides. Factors affecting separation
by V. Dolnik, J. Liu, J. F. Banks, Jr. and M. V. Novotny (Bloomington, IN, U.S.A.) and P. Boček (Brno, Czechoslovakia) 321

Capillary electrophoresis of nucleic acids with a fully automated apparatus
by H. Yamamoto, T. Manabe and T. Okuyama (Tokyo, Japan) 331

Performance of carbohydrate-modified fused-silica capillaries for the separation of proteins by zone electrophoresis
by G. J. M. Bruin, R. Huisden, J. C. Kraak and H. Poppe (Amsterdam, The Netherlands) 339

Separation of the human transferrin isoforms by carrier-free high-performance zone electrophoresis and isoelectric focusing
by F. Kilàr and S. Hjertén (Uppsala, Sweden) 351

High-resolution two-dimensional electrophoresis of wheat proteins
by D. A. Dougherty, M. G. Zeece, R. L. Wehling and J. E. Partridge (Lincoln, NE, U.S.A.) 359

Separation of collagens by capillary zone electrophoresis
by Z. Deyl, V. Rohlicek and M. Adam (Prague, Czechoslovakia) 371

Characterization of human growth hormone by capillary electrophoresis
by J. Frenz, S.-L. Wu and W. S. Hancock (South San Francisco, CA, U.S.A.) 379

Capillary zone electrophoresis of peptide fragments from trypsin digestion of biosynthetic human growth hormone
by R. G. Nielsen, R. M. Riggin and E. C. Rickard (Indianapolis, IN, U.S.A.) 393

Chiral separation by electrokinetic chromatography with bile salt micelles
by S. Terabe, M. Shibata and Y. Miyashita (Kyoto, Japan) 403

Enantioselective hydrophobic entanglement of enantiomeric solutes with chiral functionalized micelles by electrokinetic chromatography
by A. Dobashi, T. Ono and S. Hara (Tokyo, Japan) and J. Yamaguchi (Saitama, Japan) . 413

Sensitive resolution of *Giardia lamblia* membrane antigens
by E. W. Mohareb, J. B. Hughes and J. I. Bruce (Lowell, MA, U.S.A.) 421

Determination of metal ion complexes in electroplating solutions using capillary zone electrophoresis with UV detection
by M. Aguilar, X. Huang and R. N. Zare (Stanford, CA, U.S.A.) 427

Author Index 433